



<10> Jager, Dirk  
Stockert, Elizabeth  
Scanlan, Matthew  
Gure, Ali  
Knuth, Alexander  
Old, Lloyd  
Chen, Yao-tseng

<120> Isolated Nucleic Acid Molecules Encoding Cancer Associated Antigens,  
the Antigens Per Se, and Uses Thereof

<130> LUD-5793.1

<140> US 10/729,340

<141> 2003-12-04

<150> US 60/430,869

<151> 2002-12-04

<150> US 10/181,663

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<151> 2000-06-22

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cccatcgacc	ccaacgaacc	cacgtactgt	ctgtgcaacc	aggtctccta	tggggagatg	660
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35 40 45
Lys Glu Leu Asp Glu Cys Tyr Glu Arg Phe Ser Arg Glu Thr Asp Gly
50 55 60
Ala Gln Lys Arg Arg Met Leu His Cys Val Gln Arg Ala Leu Ile Arg
65 70 75 80
Ser Gln Glu Leu Gly Asp Glu Lys Ile Gln Ile Val Ser Gln Met Val
85 90 95
Glu Leu Val Glu Asn Arg Thr Arg Gln Val Asp Ser His Val Glu Leu
100 105 110
Phe Glu Ala Gln Gln Glu Leu Gly Asp Thr Val Gly Asn Ser Gly Lys
115 120 125
Val Gly Ala Asp Arg Pro Asn Gly Asp Ala Val Ala Gln Ser Asp Lys
130 135 140
Pro Asn Ser Lys Arg Ser Arg Arg Gln Arg Asn Asn Glu Asn Arg Glu
145 150 155 160
Asn Ala Ser Ser Asn His Asp His Asp Asp Gly Ala Ser Gly Thr Pro
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Lys Glu Lys Lys Ala Lys Thr Ser Lys Lys Lys Lys Arg Ser Lys Ala
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Lys Ala Glu Arg Glu Ala Ser Pro Ala Asp Leu Pro Ile Asp Pro Asn
195 200 205
Glu Pro Thr Tyr Cys Leu Cys Asn Gln Val Ser Tyr Gly Glu Met Ile
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Gly Cys Asp Asn Asp Glu Cys Pro Ile Glu Trp Phe His Phe Ser Cys
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Val Gly Leu Asn His Lys Pro Lys Gly Lys Trp Tyr Cys Pro Lys Cys
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 Arg Ser Lys Ala Lys Ala Glu Arg Glu Ala Ser Pro Ala Asp Leu Pro  
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 Ile Asp Pro Asn Glu Pro Thr Tyr Cys Leu Cys Asn Gln Val Ser Tyr  
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 Gly Glu Met Ile Gly Cys Asp Asn Asp Glu Cys Pro Ile Glu Trp Phe  
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 His Phe Ser Cys Val Gly Leu Asn His Lys Pro Lys Gly Lys Trp Tyr  
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Glu Gln Thr Leu Arg Ala Asp Glu Ile Leu Pro Ser Glu Ser Lys Gln
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Lys Asp Tyr Glu Glu Ser Ser Trp Asp Ser Glu Ser Leu Cys Glu Thr
65          70          75          80
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145         150         155         160
Lys Ala Leu Glu Leu Lys Asn Glu Gln Thr Leu Arg Ala Asp Gln Met
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 Ser Gly Gln Leu Lys Val Leu Ile Ala Glu Asn Thr Met Leu Thr Ser  
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 450 455 460  
 Ser His His Pro Arg Leu Ala Ser Ala Val Gln Asp His Asp Gln Ile  
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Gly Ala Asp Arg Pro Asn Gly Asp Ala Val Ala Gln Ser Asp Lys Pro  
145 150 155 160  
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165 170 175  
Ala Ser Ser Asn His Asp His Asp Asp Gly Ala Ser Gly Thr Pro Lys  
180 185 190  
Glu Lys Lys Ala Lys Thr Ser Lys Lys Lys Lys Arg Ser Lys Ala Lys  
195 200 205  
Ala Glu Arg Glu Ala Ser Pro Ala Asp Leu Pro Ile Asp Pro Asn Glu  
210 215 220  
Pro Thr Tyr Cys Leu Cys Asn Gln Val Ser Tyr Gly Glu Met Ile Gly  
225 230 235 240  
Cys Asp Asn Asp Glu Cys Pro Ile Glu Trp Phe His Phe Ser Cys Val  
245 250 255  
Gly Leu Asn His Lys Pro Lys Gly Lys Trp Tyr Cys Pro Lys Cys Arg  
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<210> 21

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 Met Asp Met Gln Thr Phe Lys Ala Glu Pro Pro Glu Lys Pro Ser Ala

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His Gln Lys Glu Ile	Asp Lys Ile Asn Gly Lys	Leu Glu Glu Ser Pro		
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Val Asn Tyr Ile His Gln Gln Leu Leu Glu His Ile Arg Lys Leu Pro
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25452352.2

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	850					855					860				
Asp	Met	Gln	Thr	Phe	Lys	Ala	Glu	Pro	Pro	Glu	Lys	Pro	Ser	Ala	Phe
865					870					875					880
Glu	Pro	Ala	Ile	Glu	Met	Gln	Lys	Ser	Val	Pro	Asn	Lys	Ala	Leu	Glu
			885					890						895	
Leu	Lys	Asn	Glu	Gln	Thr	Leu	Arg	Ala	Asp	Gln	Met	Phe	Pro	Ser	Glu
		900						905					910		
Ser	Lys	Gln	Lys	Lys	Val	Glu	Glu	Asn	Ser	Trp	Asp	Ser	Glu	Ser	Leu

915	920	925
Arg Glu Thr Val Ser Gln Lys Asp Val Cys Val Pro Lys Ala Thr His		
930	935	940
Gln Lys Glu Met Asp Lys Ile Ser Gly Lys Leu Glu Asp Ser Thr Ser		
945	950	955
Leu Ser Lys Ile Leu Asp Thr Val His Ser Cys Glu Arg Ala Arg Glu		
965	970	975
Leu Gln Lys Asp His Cys Glu Gln Arg Thr Gly Lys Met Glu Gln Met		
980	985	990
Lys Lys Lys Phe Cys Val Leu Lys Lys Lys Leu Ser Glu Ala Lys Glu		
995	1000	1005
Ile Lys Ser Gln Leu Glu Asn Gln Lys Val Lys Trp Glu Gln Glu Leu		
1010	1015	1020
Cys Ser Val Arg Leu Thr Leu Asn Gln Glu Glu Glu Lys Arg Arg Asn		
1025	1030	1035
Ala Asp Ile Leu Asn Glu Lys Ile Arg Glu Glu Leu Gly Arg Ile Glu		
1045	1050	1055
Glu Gln His Arg Lys Glu Leu Glu Val Lys Gln Gln Leu Glu Gln Ala		
1060	1065	1070
Leu Arg Ile Gln Asp Ile Glu Leu Lys Ser Val Glu Ser Asn Leu Asn		
1075	1080	1085
Gln Val Ser His Thr His Glu Asn Glu Asn Tyr Leu Leu His Glu Asn		
1090	1095	1100
Cys Met Leu Lys Lys Glu Ile Ala Met Leu Lys Leu Glu Ile Ala Thr		
1105	1110	1115
Leu Lys His Gln Tyr Gln Glu Lys Glu Asn Lys Tyr Phe Glu Asp Ile		
1125	1130	1135
Lys Ile Leu Lys Glu Lys Asn Ala Glu Leu Gln Met Thr Leu Lys Leu		
1140	1145	1150
Lys Glu Glu Ser Leu Thr Lys Arg Ala Ser Gln Tyr Ser Gly Gln Leu		
1155	1160	1165
Lys Val Leu Ile Ala Glu Asn Thr Met Leu Thr Ser Lys Leu Lys Glu		
1170	1175	1180
Lys Gln Asp Lys Glu Ile Leu Glu Ala Glu Ile Glu Ser His His Pro		
1185	1190	1195
Arg Leu Ala Ser Ala Val Gln Asp His Asp Gln Ile Val Thr Ser Arg		
1205	1210	1215
Lys Ser Gln Glu Pro Ala Phe His Ile Ala Gly Asp Ala Cys Leu Gln		
1220	1225	1230
Arg Lys Met Asn Val Asp Val Ser Thr Ile Tyr Asn Asn Glu Val		
1235	1240	1245
Leu His Gln Pro Leu Ser Glu Ala Gln Arg Lys Ser Lys Ser Leu Lys		
1250	1255	1260
Ile Asn Leu Asn Tyr Ala Gly Asp Ala Leu Arg Glu Asn Thr Leu Val		
1265	1270	1275
Ser Glu His Ala Gln Arg Asp Gln Arg Glu Thr Gln Cys Gln Met Lys		
1285	1290	1295
Glu Ala Glu His Met Tyr Gln Asn Glu Gln Asp Asn Val Asn Lys His		
1300	1305	1310
Thr Glu Gln Gln Glu Ser Leu Asp Gln Lys Leu Phe Gln Leu Gln Ser		
1315	1320	1325
Lys Asn Met Trp Leu Gln Gln Gln Leu Val His Ala His Lys Lys Ala		
1330	1335	1340
Asp Asn Lys Ser Lys Ile Thr Ile Asp Ile His Phe Leu Glu Arg Lys		
1345	1350	1355
Met Gln His His Leu Lys Glu Lys Asn Glu Glu Ile Phe Asn Tyr		
1365	1370	1375

Asn Asn His Leu Lys Asn Arg Ile Tyr Gln Tyr Glu Lys Glu Lys Ala  
1380 1385 1390  
Glu Thr Glu Asn Ser  
1395